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MS APPEAL BRIEF - PATENTS

Docket No.: 1403-0212P

(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Narihiro TAHARA et al.

Application No.: 09/903,694

Confirmation No.: 009156

Filed: July 13, 2001

Art Unit: 1714

For: RUBBER COMPOSITION FOR TIRE TREAD

Examiner: T. H. Yoon

APPEAL BRIEF TRANSMITTAL FORM

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Appeal Brief on behalf of the Appellants in connection with the above-identified application.

☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.

A Notice of Appeal was filed on August 7, 2006.

☐ Applicant claims small entity status in accordance with 37 C.F.R. § 1.27.

The fee has been calculated as shown below:

☐ Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - _____

☒ Fee for filing an Appeal Brief - \$500.00 (large entity).

Application No.: 09/903,694

Docket No.: 1403-0212P

☒ Check in the amount of 500.00 is attached.

☐ Please charge Deposit Account No. 02-2448 in the amount of _____. A triplicate copy of this sheet is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: October 10, 2006

Respectfully submitted,

By 

Andrew D. Meikle

Registration No.: 32,868
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attachment(s)



| | | | |
|---|--|--------------------------|--------------------------|
| Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818). | | Complete if Known | |
| FEE TRANSMITTAL For FY 2005 | | Application Number | 09/903,694-Conf. #009156 |
| | | Filing Date | July 13, 2001 |
| | | First Named Inventor | Narihiro TAHARA |
| | | Examiner Name | T. H. Yoon |
| | | Art Unit | 1714 |
| <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27 | | Attorney Docket No. | 1403-0212P |
| TOTAL AMOUNT OF PAYMENT | | (\$) | 500.00 |

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|--|--|
| METHOD OF PAYMENT (check all that apply) | |
| <input checked="" type="checkbox"/> Check | <input type="checkbox"/> Credit Card |
| <input type="checkbox"/> Money Order | <input type="checkbox"/> None |
| <input type="checkbox"/> Other (please identify): _____ | |
| <input type="checkbox"/> Deposit Account Deposit Account Number: <u>02-2448</u> Deposit Account Name: <u>Birch, Stewart, Kolasch & Birch, LLP</u> | |
| For the above-identified deposit account, the Director is hereby authorized to: (check all that apply) | |
| <input type="checkbox"/> Charge fee(s) indicated below | <input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee |
| <input checked="" type="checkbox"/> Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17 | <input checked="" type="checkbox"/> Credit any overpayments |

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|---|--------------------|---------------------|---|----------------------|----------------------------------|----------------------|-----------------------|
| FEE CALCULATION | | | | | | | |
| 1. BASIC FILING, SEARCH, AND EXAMINATION FEES | | | | | | | |
| | FILING FEES | | SEARCH FEES | | EXAMINATION FEES | | |
| | | Small Entity | | Small Entity | | Small Entity | |
| Application Type | Fee (\$) | Fee (\$) | Fee (\$) | Fee (\$) | Fee (\$) | Fee (\$) | Fees Paid (\$) |
| Utility | 300 | 150 | 500 | 250 | 200 | 100 | _____ |
| Design | 200 | 100 | 100 | 50 | 130 | 65 | _____ |
| Plant | 200 | 100 | 300 | 150 | 160 | 80 | _____ |
| Reissue | 300 | 150 | 500 | 250 | 600 | 300 | _____ |
| Provisional | 200 | 100 | 0 | 0 | 0 | 0 | _____ |
| 2. EXCESS CLAIM FEES | | | | | | | |
| Fee Description | | | | | | Small Entity | Fee (\$) |
| Each claim over 20 (including Reissues) | | | | | | 50 | 25 |
| Each independent claim over 3 (including Reissues) | | | | | | 200 | 100 |
| Multiple dependent claims | | | | | | 360 | 180 |
| Total Claims | | Extra Claims | Fee (\$) | Fee Paid (\$) | Multiple Dependent Claims | | |
| _____ - 20 = _____ | | x _____ | = _____ | | Fee (\$) | | Fee Paid (\$) |
| HP = highest number of total claims paid for, if greater than 20. | | | | _____ | | | |
| Indep. Claims | | Extra Claims | Fee (\$) | Fee Paid (\$) | | | |
| _____ - 3 = _____ | | x _____ | = _____ | | | | |
| HP = highest number of independent claims paid for, if greater than 3. | | | | _____ | | | |
| 3. APPLICATION SIZE FEE | | | | | | | |
| If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). | | | | | | | |
| Total Sheets | | Extra Sheets | Number of each additional 50 or fraction thereof | | Fee (\$) | Fee Paid (\$) | |
| _____ - 100 = _____ | | /50 | _____ (round up to a whole number) x _____ | | = _____ | | |
| 4. OTHER FEE(S) | | | | | | | |
| Non-English Specification, \$130 fee (no small entity discount) | | | | | | | |
| Other (e.g., late filing surcharge): <u>1402 Filing a brief in support of an appeal</u> | | | | | | <u>500.00</u> | |

| | | | |
|---------------------|------------------|-----------------------------------|------------------|
| SUBMITTED BY | | | |
| Signature | | Registration No. (Attorney/Agent) | 32,868 |
| Name (Print/Type) | Andrew D. Meikle | Telephone | (703) 205-8000 |
| | | Date | October 10, 2006 |



PATENT
1403-0212P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: NARIHIRO et al. Conf.: 9156
Appl. No.: 09/903,694 Group: 1714
Filed: July 13, 2001 Examiner: K. Wyrozewski
For: RUBBER COMPOSITION FOR TIRE TREAD

BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 10, 2006

Sir:

Appellants hereby appeal the Examiner's Final Rejection of September 1, 2005 of claims 1, 2, 5, 7 and 8. A Notice of Appeal was timely filed on August 7, 2006.

I. Real Party in Interest

The real party in interest is Sumitomo Rubber Industries, Ltd. of Japan.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1, 2, 5, 7 and 8 are pending and under appeal.

Claims 3, 4 and 6 are cancelled.

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IV. Status of Amendments

No amendments were filed after Final Rejection.

V. Summary of Claimed Subject Matter

The present invention is directed to a studless tire which possesses improved performance on snow and ice. As described on page 22, lines 16-20 of the present application, performance on ice and snow and abrasion resistance can only be improved while maintaining dispersibility of the reinforcing agent without increasing the rubber hardness.

Consistent with the above, the present invention is directed to a studless tire having a tire tread containing a rubber composition, wherein the rubber composition comprises (a) a diene rubber, 2 to 30 parts by weight of (b) glass fibers, (c) at least one member selected from the group consisting of carbon black and silica, and 1 to 15 parts by weight of (d-1) aluminum hydroxide softer than the glass fibers and having an average particle-size of less than 25 μm and/or (d-2) silicone rubber powders based on 100 parts by weight of the diene rubber.

VI. The Rejections to be Reviewed on Appeal

The Examiner issues the following Final rejections:

(1) Claims 1 and 2 stand rejected under 35 USC 103(a) as being unpatentable over JP 409241427A in view of EP 1006007.

(2) Claims 1, 2, 5, 7 and 8 stand rejected under 35 USC 103(a) as being unpatentable over Ohta et al (U.S. Patent No. 6,489,389) or EP 945482 in view of EP 1006007.

In summary, the Examiner takes the position that (1) it would have been obvious to utilize the glass fibers of EP '007 in the tire tread of JP '427 "to obtain reinforcing properties and since the use of glass fibers for a tire tread composition is a routine practice in the art", and (2) it would be obvious to utilize the glass fibers of EP '007 in Ohta et al or EP '482.

VII. Argument

A. Issues Presented for Appeal

The issues presented for appeal are the following:

- Has the Examiner presented a *prima facie* case of obviousness of the subject matter of claims 1 and 2 under 35 USC 103(a) over JP 409241427A in view of EP 1006007 and if so, have appellants rebutted any such *prima facie* case of obviousness?
- Has the Examiner presented a *prima facie* case of obviousness of the subject matter of claims 1, 2, 5, 7 and 8 under 35 USC 103(a) over Ohta et al (U.S. Patent No. 6,489,389) or EP 945482 in view of EP 1006007 and if so, have appellants rebutted any such *prima facie* case of obviousness?

B. The Evidence of Record

Appellants made of record on March 1, 2006 a Declaration under 37 CFR 1.132. A copy of the Declaration is provided in the attached appendix. Comparative data also resides in the examples of the specification.

C. The Rejections of the Claims under 35 USC 103(a)

The Examiner issues the following two prior art rejections:

(1) Claims 1 and 2 stand rejected under 35 USC 103(a) as being unpatentable over JP '409241427A in view of EP '007.

In support of the rejection, the Examiner takes the position that:

“It would have been obvious to one skilled in the art at the time of invention to utilize glass fibers of EP in JP409241427A in order to improve mechanical properties since one of the objectives of JP409241427A is to improve reinforcing properties and since the use of glass fibers for a tire tread composition is a routine practice in the art.” See Office Action of September 1, 2005 (page 2).

(2) Claims 1, 2, 5, 7 and 8 stand rejected under 35 USC 103(a) as being unpatentable over Ohta et al or EP '482 in view of EP '007.

In support of the rejection, the Examiner takes the position that:

“It would have been obvious to one skilled in the art at the time of invention to utilize glass fibers of EP '007 in Ohta et al or EP '482 in order to improve mechanical properties since Ohta et al and EP teach employing other additives at col. 6, lines 20-27 and in [0051], respectively, and since the use of glass fibers for a tire tread composition is a routine practice in the art.” Page 3 of Office Action of September 1, 2005.

D. The Examiner Fails to Present a Prima Facie Case of Obviousness

The Examiner fails to present a *prima facie* case of obviousness based on the prior art of record.

1. The Relevant Legal Standard

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, *In re*

Keller, 642 F. 2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a *prima facie* case of obviousness, it is incumbent upon the Examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference, or to combine the teachings of the prior art to arrive at the claimed invention. *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). The requisite motivation must stem from some teaching, suggestion, or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellants' disclosure. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1052, 5 USPQ 2d 1434, 1439 (Fed. Cir.), *cert. denied*, 488 U.S. 825 (1988). The Examiner has not met this standard.

2. The Advantages of Appellants' Invention

By way of review, the present invention is directed to a studless tire which possesses improved performance on snow and ice. As described on page 22, lines 16-20 of the present application, performance on ice and snow and abrasion resistance can only be improved *while maintaining dispersibility of the reinforcing agent and without increasing the rubber hardness*.

Improvement in tire performance on ice and abrasion resistance, while maintaining dispersibility of the carbon black, is achieved by compounding 2 to 30 parts by weight of glass fibers in the rubber composition *together with* 1 to 15 parts by weight of aluminum hydroxide and/or silicone rubber powders.

The importance of glass fibers in the rubber composition of the present invention is discussed on page 5, line 16 to page 7, line 11 of the present application. Glass fibers are used selectively of a large number of choices of

inorganic fibers because they are inexpensive, can increase the performance on snow and ice by providing improved abrasion resistance and can decrease the cost of the overall tire manufacturing process. The overall cost can be decreased because glass fibers are cut easily by mechanical shearing in a mixing step which enables a cutting step for long fibers to be omitted, and because short fibers have a lowest specific gravity and are inhibited from splashing in the process.

The glass fibers are used in an amount of 2 to 30 parts by weight. If the glass fibers are used in an amount of less than 2 parts by weight, they tend to decrease in the amount in which they protrude from the tread surface thereby achieving insufficient digging and scratching, and thus adversely affecting the performance of the tire on snow and ice. If more than 30 parts by weight of glass fibers are utilized, they tend to increase block stiffness of the tread rubber excessively and tend to inhibit the tread rubber surface from following the snow and ice road. A specific range of glass fibers thus exists within which the fibers are advantageously present in the studless tire of the present invention for achieving specific advantageous results.

Also, the studless tire of the present invention contains aluminum hydroxide powder having an average particle size of less than 25 μm , and/or silicone rubber powder. Such powders are used in an amount of 1 to 15 parts by weight based on a 100 parts by weight of the diene rubber. Less than 1 part by weight of the powders cannot improve dispersibility of the reinforcing agent and cannot provide a desirable property. More than 50 parts by weight of the powders tends to decrease the durability.

3. The Rejection over JP '427 and EP '007

Claims 1 and 2 stand finally rejected over JP '427 in view of EP '007.

The JP '427 reference is directed to a tread rubber composition for a studless tire. The composition is comprised of 100 parts by weight of a diene-based rubber, 0.5 to 40 parts by weight of a silicone-based polymer, and 30-80 parts by weight of carbon black. The reference is silent with regard to the presence of *either* glass fibers or aluminum hydroxide as claimed.

The EP '007 reference is directed to a rubber composition for use in a tire tread comprised of 100 parts by weight of a rubber component and 2 to 30 parts by weight of short fibers, and a reinforcing agent such as carbon black or silica. The short fibers may be comprised of a variety of materials, such as glass fiber, aluminum whiskers, organic fibers (polyester, nylon, vinylon, aromatic polyamide, etc.). The reference is silent with respect to the presence of *either* aluminum hydroxide or silicone polymer powder.

With regard to EP '007, appellants note that in the Example of EP '007, it is taught that blending 10 parts by weight of glass fibers provides high performance on ice and snow, but the rubber hardness considerably increases with the passage of time, and sufficient abrasion resistance cannot be obtained since neither aluminum hydroxide nor silicone rubber powder are present.

Accordingly, in accordance with EP '007, rubber hardness increases considerably with the passage of time, and sufficient dispersibility of carbon black as well as abrasion resistance cannot be obtained.

The Examiner takes the position that it would be obvious to modify the rubber composition of JP '427 by adding glass fibers to the composition as taught by EP '007. However, EP '007 does not specifically teach the inclusion of glass fibers *per se*, but the inclusion of short fibers, of which glass fibers are but one of a number of choices. EP '007 contains no specific teaching which would lead one of ordinary skill in the art to modify the composition of JP '427 by the inclusion of one species (glass fibers) of a number of short fibers disclosed therein. Such a modification can only occur as a result of hindsight analysis of the prior art.

The Examiner has thus failed to present a *prima facie* case of obviousness with respect to this rejection.

4. The Rejection over Ohta et al or EP '482 in view of EP '007

Claims 1, 2, 5, 7 and 8 stand rejected over Ohta or EP '482 in view of EP '007.

Ohta et al is directed to a rubber composition for tire treads comprised of at least 70 parts by weight of a styrene-butadiene rubber, 5 to 150 parts by weight of a powdery inorganic compound such as aluminum hydroxide, and 5 to 170 parts by weight of carbon black. The reference is silent with respect to the presence of either silicone polymer powder or glass fibers.

EP '482 is directed to a rubber composition comprised of a diene rubber, aluminum hydroxide powder and carbon black. The reference is silent with respect to the use of glass fibers.

The EP '007 reference is directed to a rubber composition for use in a tire tread comprised of 100 parts by weight of a rubber component and 2 to 30 parts

by weight of short fibers, and a reinforcing agent such as carbon black or silica. The short fibers may be comprised of a variety of materials, such as glass fiber, aluminum whiskers, organic fibers (polyester, nylon, vinylon, aromatic polyamide, etc.). The reference is silent with respect to the presence of either aluminum hydroxide or silicone polymer powder.

Thus, one of ordinary skill in the art cannot determine, based on the teachings of the references, the importance of the presence of glass fibers, as well as the importance of the presence and amount of either aluminum hydroxide powder or silicone rubber powder necessary to produce a studless tire having the desired advantageous properties. While the Examiner takes the position that it would be obvious to modify the rubber composition of Ohta in view of the teachings of the two EP references, it is clear that the EP references lack any teaching or suggestion that would permit the asserted modification.

Thus, one of ordinary skill in art can only develop the specific parameters defined by the claims of the present application when taking into consideration appellants' own disclosure using hindsight analysis.

The Examiner thus fails to present a *prima facie* case of obviousness in relation to the invention of the rejected claims.

5. The Comparative Data of Record Rebuts any Prima Facie Case of Obviousness that may be Presented with regard to Claims 1 and 7

Appellants' specification includes comparative data which supports appellants' rebuttal of the Final Rejection, particularly with respect to

independent claim 1 (directed to the rubber composition *per se*) and dependent claim 7 (directed to the use of aluminum hydroxide powder).

Appellants also made of record a Declaration under 37 CFR 1.132 which additionally demonstrates the advantages of the claimed invention. A copy of the Declaration under 37 CFR 1.132 is attached in the Evidence Appendix. The noted comparative data is discussed in detail below in relation to the subject matter of claims 1 and 7.

As noted above, claim 7 is directed to the presence of aluminum hydroxide as component (d-1) in the composition of claim 1. The comparative data rebuts any *prima facie* case of obviousness that may be presented with respect to claims 1 and 7.

As shown in Table 1 of the present application, the rubber composition of Example 1 is obtained by compounding aluminum hydroxide together with 10 parts per weight of glass fibers, which falls within the claimed range of 2 to 30 parts by weight of glass fibers as recited in claim 1 of the present application. In contrast, Comparative Example 1 does not contain 2 to 30 parts by weight of glass fibers. It should be noted that the rubber composition of Example 1 is improved in performance on ice and in abrasion resistance while maintaining dispersibility of carbon black. In contrast, Comparative Example 1 does not possess these improved properties due to the absence of glass fibers.

As shown at Example 1 of Table 1 of the present specification, which composition comprises 10 parts by weight of glass fibers and 5 parts by weight of aluminum hydroxide, the degree of dispersion of carbon black is indicated as a

superior value of 97%. Correspondingly, as shown at Example 4 of Table 2 of the present specification, which comprises 10 parts by weight of glass fibers and 10 parts by weight of silicone rubber powder, the hardness value is a superior value of 4.

Further, appellants note that, as shown in Comparative Example 2 of Table 1 and Comparative Example 6 of Table 2 of the present specification, which comprises 10 parts by weight of glass fibers, and does not comprise aluminum hydroxide and/or silicone rubber powder, the rubber hardness increases considerably with the passage of time, and sufficient dispersibility of carbon black and abrasion resistance cannot be obtained.

As shown in Experiment 1 at Table 1, and Experiment 2 of Table 2 of the attached Declaration under 37 CFR 1.132, when glass fibers are not present, satisfactory performance on ice and snow cannot be achieved. More specifically, Experiment 1 includes 5 parts by weight of aluminum hydroxide, but does not include glass fibers. The resulting performance on ice value for the resulting tire is a inferior value of 100. Example 2 includes 10 parts by weight of silicone rubber powders, and does not include glass fibers. Performance on ice is similarly an inferior value of 100.

Similarly, as shown at Example 1 of Table 1 of the present specification, which comprises 10 parts by weight of glass fibers and 5 parts by weight of aluminum hydroxide, the performance on ice is found to be a superior value of 105. Also, as shown in Example 4 of Table 2 of the present specification, which

comprises 10 parts by weight of glass fibers and 10 parts by weight of silicone rubber powders, the performance on ice is found to be a superior value of 106.

Claim 7 is directed to the presence of aluminum hydroxide as component (d-1) in the composition of claim 1. The comparative data rebuts any *prima facie* case of obviousness that may be presented with respect to claims 1 and 7.

Based on the above, it is clear that the comparative data made of record by appellants demonstrates the advantages which result from the combined use of the recited components in the claimed rubber composition. Such results are neither suggested by nor predictable based on the teachings of the cited prior art.

VIII. Conclusion

The rejections of claims 1, 2, 5, 7 and 8 under 35 USC 103(a) are without basis and should be reversed by the Honorable Board.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By


Andrew D. Meikle # 32,868

ADM/JWH

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

CLAIMS ON APPEAL

1. A studless tire having a tire tread containing a rubber composition, wherein said rubber composition comprises (a) a diene rubber, 2 to 30 parts by weight of (b) glass fibers, (c) at least one member selected from the group consisting of carbon black and silica, and 1 to 15 parts by weight of (d-1) aluminum hydroxide softer than the glass fibers and having an average particle-size of less than 25 μm and/or (d-2) silicone rubber powders based on 100 parts by weight of the diene rubber.

2. The studless tire of claim 1, wherein the aluminum hydroxide has a Mohs hardness of less than 6.5 and an average particle-size of not less than 0.03 μm .

5. The studless tire of claim 1, which further comprises a softener.

7. The studless tire of claim 1, which comprises said (d-1) aluminum hydroxide component.

8. The studless tire of claim 7, wherein the aluminum hydroxide has a Mohs hardness of less than 6.5 and an average particle-size of not less than 0.03 μm .

EVIDENCE APPENDIX

Appellants made of record with the response of March 1, 2006 a

Declaration under 37 CFR 1.132 (copy attached hereto)

RELATED APPEALS AND INTERFERENCES APPENDIX

There are no related appeals or interferences.